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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,534	08/22/2003	Klaus Gunter	02P15129	8102

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EXAMINER	
PATEL, ASHOK	
ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/645,534	GUNTER, KLAUS	
	Examiner	Art Unit	
	Ashok Patel	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 August 2005*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☒ Claim(s) *13 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *081505*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura et al (USPN 6,495,962, of record).

Uemura et al disclose applicant's claimed including: a discharge vessel (1a), which has a tubular section which consists of a transparent ceramic (col. 4, lines 42); two electrodes (1b) for generating a gas discharge, which are enclosed in a gastight manner in the discharge vessel and the discharge-side ends of which are arranged opposite one another in the tubular section, with the result that the distance between the discharge-side ends of the electrodes is less than or equal to 10 mm (see all Examples), and an ionizable mercury-

free fill (col. 1, lines 6-9) which is enclosed in the discharge vessel, is used as a discharge medium and consists of xenon (see all examples) with a cold tilling pressure of at least 2000 hpa (see all examples, especially Example 11-1; note 1atm = 1013hPa, therefore 3 atmosphere equals 3039hPa which satisfies applicant's claimed range of at least 2000hPa) and metal halides (see all examples).

Uemura et al differ from applicant's claimed lamp only in that internal diameter of Uemura et al's discharge lamp vessel is 3mm (example 11-1) which is slightly higher than applicant's claimed internal diameter of 2mm. However, difference of discharge vessel would have been obvious variations to those skilled in the art since it have been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

As to claims 10 and 11, Uemura et al disclose the lamp fill including metal halides (iodides) of sodium, dysprosium.

As to the limitation "the color temperature of the light emitted by the lamp is between 3500 Kelvins and 5000 Kelvins", this limitation is narrative in form and does not constitute a positive structure of the claimed device. As such the limitation "the total quantity of iodide being selected in such a manner

that the color temperature of the light emitted by the lamp is between 3500 Kelvins and 5000 Kelvins" is not given a patentable weight. In order for the limitation to be given patentable weight, a functional recitation must be expresses a "means" for performing the specified function, as set forth in 35 U.S.C. 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language. In re fuller, 1929 C.D. 172: 388 O.G. 279.

4. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura et al (USPN 6,495,962, of record) in view of Scott et al (USPN 6,126,889, of record).

As to claim 2, Uemura et al fail to exemplify the tubular section formed of single- crystalline sapphire.

Scott teaches a discharge vessel for a high-pressure lamp in a tubular configuration and formed of single-crystalline sapphire (column 2, lines 32-33). Scott teaches single-crystalline sapphire as preferable to polycrystalline sapphire for its increased transmission characteristics, which results in improved lamp performance (column 1, lines 21-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the discharge vessel of Uemura et al to have a tubular section formed of single-

crystalline sapphire in order to improve the transmission of the lamp tube and thereby improve the performance of the lamp, as taught by Scott.

As to claim 3, Uemura et al discloses closure pieces made from ceramic since the discharge vessel is made of ceramic and is provided with supply conductors (1b1) for the electrodes (4 and 5).

Uemura et al fail to exemplify the ceramic material of the closure pieces or the closure pieces receiving the ends of the tubular section. Scott teaches that the use of single-crystalline sapphire for the tubular section of a discharge vessel rather than polycrystalline sapphire requires different sealing methods and sealing structure (column 1, lines 35-49). Scott teaches a sealing structure having closure pieces (14) of polycrystalline alumina (column 2, lines 44-45) provided with supply conductors (36) for the electrodes (38), the closure pieces each having a recess for receiving one end of the tubular section (12), the internal dimensions of the recesses being matched to the external diameter of the corresponding end of the tubular section. The closure pieces are fixed to the corresponding end of the tubular section by a sintered joint (column 3, lines 34-67). Therefore regarding claim 3, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the discharge vessel of Uemura et al to have a tubular section formed of single-crystalline

sapphire rather than polycrystalline sapphire in order to improve the transmission of the lamp tube and thereby improve the performance of the lamp, and to further modify the lamp of Uemura et al to have polycrystalline alumina closure pieces with recesses for receiving the end portions of the tubular section and sintered to the tubular section in order to provide a strong seal for the single-crystalline sapphire tube, as taught by Scott.

5. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura et al (USPN 6,495,962, of record) in view of Scott et al (USPN 6,126,889, of record) and further in view of Hendricx (6,404,129, of record).

Regarding claims 4 and 7, although it is known in the high pressure discharge lamp art to provide an opaque coating on a part of the outer surface of the closure pieces for transmitting the emitted light in a desired area and for thermally conducting the heat, Hendricx is cited for showing such feature. Hendricx discloses a coating of platinum (column 2, line 65), which is a metal and therefore is thermally conductive.

Therefore, it would have been obvious to one of ordinary skill in the art to modify Uemura et al's high pressure discharge lamp by providing the tubular section of single crystalline-sapphire for improving the transmission of the lamp

tube, as mentioned in the rejection of claims 2 and 3, and by providing the opaque coating on a part of the outer surface of the closure pieces for transmitting the emitted light in a desired area and for thermally conducting the heat.

6. Claims 5, 6, 8, 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura et al (USPN 6,495,962, of record) in view of Hendricx (6,404,129, of record).

As to claim 5, although Uemura et al do not disclose the tubular section consisting of a material as claimed by applicant, the use applicant's claimed material is known to those skill in the art as suitable alternative material for the discharge vessel portion. Hendricx is however cited for showing the tubular section of the discharge vessel consisting of yttrium aluminum garnet (column 1, lines 32-36). Consequently, applicant's cláimed material would have been a matter of obvious alternative choice to one of ordinary skill in the art for the discharge vessel.

As to claims 6 and 12, Hendricx discloses the thermally conductive platinum coating (column 2, line 65) on the tubular section, as mentioned earlier in the rejection of claims 4 and 7 transmitting the emitted light in a desired area and for thermally conducting the heat.

Therefore, it would have been obvious to one of ordinary skill in the art to modify Uemura et al's high pressure discharge lamp by providing the opaque coating on a part of the outer surface of the closure pieces for transmitting the emitted light in a desired area and for thermally conducting the heat, as taught by Hendricx.

As to claim 8 and 9, providing applicant's claimed outer bulb is known in the art for providing added protection and isolating (evacuating) the discharge vessel from the atmospheric contact, as taught by Hendricx. Hendricx discloses the discharge vessel surrounded by an outer bulb (1). Therefore, it would have been obvious to one of ordinary skill in the art provide the outer envelope to Uemura et al's lamp for providing added protection and isolating the discharge vessel from the atmospheric contact, as taught by Hendricx.

7. Claims 13 and 14 are in the condition for allowance since prior art of the record does not disclose applicant's claimed high pressure discharge lamp including specific vessel material, specific internal diameter, specific electrode spacing, ionizable mercury-free fill at a cold filling pressure of at least 2000hPa and consisting of halides of metals sodium, dysprosium, holmium, thulium and thallium.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok Patel whose telephone number is 571-272-2456. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ashok Patel
Primary Examiner
Art Unit 2879